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EXAMINER
FLEURANTIN, JEAN B

ART UNIT	PAPER NUMBER
2162	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<table>
<tr>
<td rowspan="2">Office Action Summary</td>
<td>Application No.
10/751,017</td>
<td>Applicant(s)
SHATDAL, AMBUJ</td>
</tr>
<tr>
<td>Examiner
JEAN B. FLEURANTIN</td>
<td>Art Unit
2162</td>
</tr>
</table>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>02 June 2008</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-3,8-11 and 15-20</u> is/are rejected.

7)☒ Claim(s) <u>4-7 & 12-14</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This is in response to Applicant's REQUEST TO REOPENED PROSECUTION filed on

06/02/2008.

        The following is the current status of claims:

        Claims 1-20 remain pending for examination.

Response to Applicant' Remarks

        Applicant's arguments filed on 09/15/06 and 06/02/2008 have been fully considered but they are

not persuasive because the combination of Reiter and APA discloses the claimed limitations: see section

A (response to argument) and section B (rejection maintained and repeated).

A.   The amendment filed on 06/02/2008 with respect to claims 8-20 overcomes the 35 U.S.C. 101

rejections. And, also, the amendment filed on 09/15/2006 with respect to claims 1 and 15 overcomes the

35 U.S.C. 101 rejections. Therefore, the Examiner withdraws the rejections.

        Applicant stated, page 8, paragraph 1, that "It is respectfully submitted that the subject matter of

the claims is not rendered obvious by the asserted combination of Reiter and APA for at least the

following two reasons: (1) no motivation or suggestion existed to combine the teachings of Reiter

and APA; and (2) the hypothetical combination of Reiter and APA does not teach or suggest all

elements of the claimed subject matter." The examiner recognizes that obviousness can only be

established by combining or modifying the teachings of the prior art to produce the claimed invention

where there is some teaching, suggestion, or motivation to do so found either in the references

themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837

F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir.

1992). In this case, Reiter fails to explicitly disclose storing the distinct value of the at least one attribute

in a first table. APA discloses a method for storing the distinct values of the at least one attribute in a first

table (see APA page 3, paragraph [0006], line 1). It would have been obvious to a person of ordinary skill

in the art at the time the invention was made to modify the method of Reiter by <u>storing</u> the distinct values of the at least one attribute in a <u>first table</u> as disclosed by APA (see APA, page 3, paragraph [0006], line 1). Such a modification would allow the method of Reiter to provide table sets in response to a multiple level aggregation query (see Reiter col. 2, lines 60-62), therefore, improving the accuracy and the reliability of the computing aggregates on distinct attribute values.

Moreover, Reiter discloses a query is a set of instructions to combine, filter, and sort the contents of one or more tables. SQL permits the specification of a query with a single level of aggregation. Such a query specifies grouping columns. For every unique combination of fields in the grouping column of a source table, a single row is created in the query table. For each such field, an aggregating function is designated. The aggregating function is used to produce a value for each field in the aggregated column.

APA discloses a database is a collection of logically related data arranged in a predetermined format, such as in tables that contain rows and columns. To access the content of a table in the database, queries according to a standard database query language are submitted to the database. A query can be issued to insert new entries into a table of a database, modify the content of the table, or to delete entries from the table; (see background paragraph [0001]). Thus, the combination of Reiter and APA discloses the claimed limitations.

The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In response to applicant's argument, page 8, paragraph 1, that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Thus, It

would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Reiter by <u>storing</u> the distinct values of the at least one attribute in a <u>first table</u> as disclosed by APA (see APA, page 3, paragraph [0006], line 1). Such a modification would allow the method of Reiter to provide table sets in response to a multiple level aggregation query (see Reiter col. 2, lines 60-62), therefore, improving the accuracy of the computing aggregates on distinct attribute values.

It is noted, that during patent examination, the pending claims must be "given the broadest reasonable interpretation consistent with the specification" Applicant always has the opportunity to amend the claims during prosecussion and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 162 USPQ 541,550-51 (CCPA 1969). The court found that applicant was advocating ... the impermissible importation of subject matter from the specification into the claim. See also In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997) (The court held that the PTO is not required, in the course of prosecution, to interpret claims in applications in the same manner as a court would interpret claims in an infringement suit. Rather, the "PTO applies to verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definition or otherwise that may be afforded by the written description contained in application's specification.") MPEP 2111.

The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. In re Cortright, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999).

For the above reasons, it is believed that the last Office Action was proper.

Claim Rejections - 35 USC § 103

B.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102
> of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject
> matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art
> to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was
> made.

Claims 1-3, 8-11 and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Pat. No. 5,713,020 issued to Reiter et al., ("Reiter") in view of applicant background, specification pages

2-4, up to paragraph [0009] ("APA").

As per claim 1, Reiter discloses "a method ~~for use~~ executable by at least one processor in a

database system" (i.e., method for processing database queries; see col. 2, lines 40-41), comprising:

"receiving, by at least one processor, a query that specifies an aggregate on distinct values of at

least one attribute" (i.e., receiving a query producing a multi level aggregation table set; col. 4, lines 34-

37), "the query further specifying grouping on plural grouping sets" (i.e., query containing a sum of order

amount for all rows (sets); see col. 5, lines 23-25), "the plural grouping sets having at least a first grouping

set" (i.e., grouping (aggregating) column; col. 5, lines 30-31) and "a second grouping set" (i.e., grouping

(aggregating) rows; col. 5, line 37);

"identifying, by at least one processor, distinct values of the at least one attribute" (i.e., each

distinct value in the designated row; col. 9, lines 15-18) and

"computing, by at least one processor, aggregates for groups specified by the first grouping set

using the first table" (i.e., performing some operation on the values of rows in the source table; col. 2,

lines 24-25); and

"computing, by at least one processor, aggregates for groups specified by the second grouping

set using the first table" (i.e., aggregating of all of the rows of the source table; see col. 5, lines 36-37).

Reiter fails to explicitly disclose <u>storing</u> the distinct values of the at least one attribute in a <u>first</u>

<u>table.</u> However, APA discloses a method for <u>storing</u> the distinct values of the at least one attribute in a

first table (see APA page 3, paragraph [0006], line 1). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Reiter by storing the distinct values of the at least one attribute in a first table as disclosed by APA (see APA, page 3, paragraph [0006], line 1). Such a modification would allow the method of Reiter to provide table sets in response to a multiple level aggregation query (see Reiter col. 2, lines 60-62), therefore, improving the accuracy of the computing aggregates on distinct attribute values.

As per claim 2, in addition to claim 1, Reiter further discloses "the grouping set is lower grouping set than the second grouping set" (i.e., higher level aggregation rows (321-323) and lower level aggregation rows (331-333); see col. 5, lines 59-67), "and wherein the first grouping set has a larger number of attributes than the second grouping set" (i.e., grouping column specifying level two; see col. 6, lines 65-67).

As per claim 3, in addition to claim 1, Reiter further discloses "computing a group-by operation on the first grouping set" (i.e., group-by operation; see table 2, lines 6-7) and "selecting the attributes of the first grouping set for output" (i.e., selecting sum or category; see table 2, lines 1-4).

As per claim 8, Reiter discloses "an article comprising at least one storage medium containing instructions that when executed cause a system to" (i.e., memory comprising an engine, executing (processing instructions) on the cpu as do the programs; see col. 4, lines 22-26 and Fig. 1), comprising:

"receiving a query that specifies an aggregate on distinct values of at least one attribute" (i.e., receiving a query producing a multi level aggregation table set; col. 4, lines 34-37), "the query further specifying grouping on plural grouping sets" (i.e., query containing a sum of order amount for all rows (sets); see col. 5, lines 23-25), "the plural grouping sets having at least a first grouping set" (i.e., grouping (aggregating) column; col. 5, lines 30-31) and "a second grouping set" (i.e., grouping (aggregating) rows; col. 5, line 37);

"identifying distinct values of the at least one attribute" (i.e., each distinct value in the designated row; col. 9, lines 15-18) and "computing aggregates for groups specified by the first grouping set using the first table" (i.e., performing some operation on the values of rows in the source table; col. 2, lines 24-25); and "computing aggregates for groups specified by the second grouping set using the first table" (i.e., aggregating of all of the rows of the source table; see col. 5, lines 36-37).

Reiter fails to explicitly disclose steps for <u>storing</u> the distinct values of the at least one attribute in a <u>first table.</u> However, APA discloses steps for <u>storing</u> the distinct values of the at least one attribute in a <u>first table</u> (see APA page 3, paragraph [0006], line 1).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Reiter by incorporating steps for <u>storing</u> the distinct values of the at least one attribute in a <u>first table</u> as disclosed by APA (see APA, page 3, paragraph [0006], line 1). Such a modification would allow the method of Reiter to provide table sets in response to a multiple level aggregation query (see Reiter col. 2, lines 60-62), therefore, improving the accuracy of the computing aggregates on distinct attribute values.

As per claim 9, in addition to claim 8, Reiter discloses "the grouping set is lower grouping set than the second grouping set" (i.e., higher level aggregation rows (321-323) and lower level aggregation rows (331-333); see col. 5, lines 59-67), "<u>and wherein the first grouping set has a larger number of attributes than the second grouping set</u>" (i.e., grouping column specifying level two; see col. 6, lines 65-67).

As per claim 10, in addition to claim 1, Reiter further discloses "computing a group-by operation on the first grouping set" (i.e., group-by operation; see table 2, lines 6-7) and "selecting the attributes of the first grouping set for output" (i.e., selecting sum or category; see table 2, lines 1-4).

As per claim 11, in addition to claim 1, Reiter fails to explicitly disclose <u>storing</u> the distinct values of the at least one attribute in a spool (table). However, APA discloses a method for <u>storing</u> the distinct values of the at least one attribute in a spool (table) (see APA page 3, paragraph [0006], lines 1-2). It

would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of Reiter by <u>storing</u> the distinct values of the at least one attribute in a spool (table) as disclosed by APA (see APA, page 3, paragraph [0006], lines 1-2). Such a modification would allow the method of Reiter to provide table sets in response to a multiple level aggregation query (see Reiter col. 2, lines 60-62), therefore, improving the accuracy of the computing aggregates on distinct attribute values.

As per claim 15, Reiter discloses "a database system" (see col. 2, lines 53-54) comprising:

"a controller <u>at least one processor</u> to" (i.e., cpu; see col. 4, line 25):

"receive a query that specifies a calculation of an aggregate on distinct values of an attribute in the table" (i.e., receiving a query producing a multi level aggregation table set; col. 4, lines 34-37), "the query to specify group-by operations on plural grouping sets" (i.e., query using the group-by 'product and category name (sets)'; see col. 5, lines 5-15 and table 2);

"in processing the query" (i.e., executing (processing) query; see col. 7, line16), and

"use the intermediate values in the intermediate spool for computing results of at lest two group-by operations on" (In light the specification at page 5, paragraph [0018], the purpose of use the intermediate spool, which corresponds intermediate table (output table) is disclosed by Reiter col. 5, lines 36-37) "at least two corresponding grouping sets" (i.e., grouping (aggregating) column; col. 5, lines 30-31) and "a second grouping set" (i.e., grouping (aggregating) rows; col. 5, line 37).

Reiter fails to explicitly disclose compute intermediate values for <u>storage in an intermediate spool</u> (table). However, APA discloses a system for computing intermediate values for <u>storage in an intermediate spool</u> (table) (see APA page 3, paragraph [0006]). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system of Reiter by compute intermediate values for <u>storage in an intermediate spool</u> (table) as disclosed by APA (see APA, page 3, paragraph [0006], line 1). Such a modification would allow the method of Reiter to provide table sets in response to a multiple level aggregation query (see Reiter col. 2, lines 60-62), therefore, improving the accuracy of the computing aggregates on distinct attribute values.

As per claim 16, Reiter discloses "wherein the query comprises a Structure Query Language (SQL) SELECT statement containing a GROUP BY clause specifying multiple grouping sets" (i.e., SQL query containing GROUP BY and SELECT statement; see col. 5, lines 5-15 and table 2).

As per claim 17, Reiter discloses "the query specifies group-by operations on plural grouping sets at multiple grouping levels" (i.e., group-by operation and product name level (1) and category name level (2); see table 2, lines 6-7).

As per claim 18, in addition to claim 8, Reiter further discloses "database management software executable on the at least one processor to perform the receiving, computing, and using acts" (i.e., memory comprising an engine and a cpu for executing programs; see col. 4, lines 22-26 and Fig. 1).

As per claim 19, in addition to claim 18, Reiter further discloses "the storage comprises plural storage modules accessible by the plural access modules in parallel" (i.e., database system comprising two components functioning in parallel, database engine for storing and database front-end for sending commands to the engine; see col. 1, lines 63-67).

As per claim 20, Reiter further discloses "the access modules executable on the processors" (i.e., database system comprising two components, database engine for storing, manipulating (processing) and database front-end (processor) for sending commands to the engine; see col. 1, lines 63-67).

Allowable Subject Matter

As per claims 4-7 and 12-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

CONTACT INFORMATION

2.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEAN B. FLEURANTIN whose telephone number is (571)272-4035. The examiner can normally be reached on 10:00 to 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E. BREENE can be reached on 571 - 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jean B. Fleurantin/
Primary Examiner, Art Unit 2162